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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,321	09/08/2000	Gerhard J. Mueller	GK-ZEI-3103/ 500343.20100	3537

7590 08/26/2003  
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EXAMINER

NGUYEN, THONG Q

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/658,321

Applicant(s)

MUELLER ET AL.

Examiner

Thong Q. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 7/23/02; 2/25/03 and 6/13/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 16 and 18-35 is/are pending in the application.
- 4a) Of the above claim(s) 21, 22, 27, 29 and 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16, 18-20, 23-26, 28 and 31-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 23 July 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14. 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. The present Office action is made in response to the amendments (Paper No. 17 of 7/23/2002; Paper No. 20 of 2/25/2003 and Paper No. 25 of 6/13/2003). It is noted that in the mentioned amendment, applicant has amended the specification and the claims as follow;

First, in the amendment (Paper No. 17), applicant has amended the specification and amended claims 16, 18-19, 24-25, 28 and 31. It is also noted that applicant has canceled claim 17 and added two new dependent claims 32-33 into the application.

Second, in the amendment (Paper No. 20), applicant has added one more independent claim, i.e., claim 34, into the application.

Third, in the amendment (Paper No. 25), applicant has amended claims 16 and 34 and simultaneously added another independent claim, i.e., claim 35, into the application.

***Election/Restrictions***

2. As amended and newly-added, the pending claims 16 and 18-35 are subjected to a restriction of the basis of species as follow.

Species (a) directs to a microscope as shown in figure 1; and

Species (b) directs to a microscope as shown in figure 2.

The claims directed to Species (a) are claims 18-20, 23-26, 28 and 31-35, and the claims directed to Species (b) are claims 21-22, 27 and 29-30. Claim 16 is a generic claim.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 16, 18-20, 23-25, 28 and 31-35 are examined in this Office action, and claims 21-22, 26-27 and 29-30 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Priority***

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Drawings***

4. The corrected drawings were received on 7/23/2003. These drawings are approved by the Examiner.

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature relating to the diaphragms, the prisms, the polarizers or subassemblies for optical contrasting as recited in claim 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

6. The lengthy specification which is amended by the amendment (Paper No. 17 of 7/23/2002) has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

7. A substitute specification without the claims is required pursuant to 37 CFR 1.125(a) because the interlineations or cancellations made in the specification could lead to confusion and mistake during the issue and printing processes.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and (c).

***Claim Rejections - 35 USC § 102***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 16, 18-20, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Muller et al (U.S. Patent No. 4,515,445, of record).

See the rejection as set forth in the previous Office action (Paper No. 11 of 1/29/2002, page 8).

10. Claims 16, 18-20, 26, 31, and 34-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Ellis et al (U.S. Patent No. 5,035,476, of record).

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Ellis et al disclose a microscope system having an illuminating device. The microscope comprises two objective lens systems disposed on opposite sides of a specimen wherein the two objective systems have the similar optical characteristics and high numerical apertures and infinite output intersection length. A mirror (64) is arranged after one of the objective (63) and acts as a phase-conjugating mirror for the purpose of reflecting the light from the specimen passing through the objective (63) back to the specimen. At columns 4 and 6, Ellis et al teach that 1) a dichroic beam-splitter can be used in place of the beam-splitter (54) in an application involves fluorescent illumination; and a detecting system is coupled with the microscope for detecting the fluorescent image. It is also noted that other optical elements such as lens system can be arranged in the light path for obtaining different results. Regarding to the features relating to the pinholes, it is noted that the system of Ellis et al comprises an illuminating device having a pinhole (53) located between the laser (51) and the objectives (61 and 63) and a second pinhole (65) located between the objectives (61 and 63) and the detector (66). See columns 4-5 and fig. 3.

11. Claims 16, 18-20, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Yonezawa (Japanese reference No. 5-288992, of record).

See the rejection as set forth in the previous Office action (Paper No. 11 of 1/29/2002, page 9).

***Claim Rejections - 35 USC § 103***

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Muller et al.

See the rejection as set forth in the previous Office action (Paper No. 11 of 1/29/2002, page 10).

14. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Ellis et al.

See the rejection as set forth in the previous Office action (Paper No. 11 of 1/29/2002, pages 10-11).

15. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Krause et al (Germany reference No. 26 31 551, submitted by applicant).

The microscope having an illuminating system and two objective lens systems disposed on the opposite sides of a sample wherein a curved mirror follows one of the objective lens system as provided by Yonezawa meets all of the features recited in present claims 24-25 except the feature concerning the type of the mirror and the mechanism for operating the mirror. However, the use of a microscope having a deformable mirror and a mechanism having electrodes and electrostatic forces for operating the mirror is clearly disclosed in the art as can be seen in the system provided by Krause et al. See pages 4-5 and fig. 2. Thus,

it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope provided by Yonezawa by utilizing a mirror having a mechanism made by electrodes and operated by electrostatic forces for controlling the operation of the mirror as suggested by Krause for the purpose of illuminating and/or detecting a sample for satisfying requirement of a particular application.

16. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Lanni et al (U.S. Patent No. 5,801,881, of record).

The microscope having an illuminating system and two objective lens systems disposed on the opposite sides of a sample wherein a curved mirror follows one of the objective lens system as provided by Yonezawa meets all of the features recited in present claims 32-33 except the feature concerning the type of the mirror and the mechanism for operating the mirror. However, the use of a microscope having a deformable mirror and a mechanism having piezoelectric elements for operating the mirror is clearly disclosed in the art as can be seen in the microscope provided by Lanni et al. See columns 5-7. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope provided by Yonezawa by utilizing a mirror having a mechanism for controlling the operation of the mirror as suggested by Lanni et al for the purpose of illuminating and/or detecting a sample for satisfying requirement of a particular application.



***Response to Arguments***

17. Applicant's arguments filed on 7/23/2002 and 6/13/2003 have been fully considered but they are not persuasive.

A) Regarding to the objection to the drawings for the reason that the drawings fail to show the feature recited in claim 19, applicant's arguments provided in the amendment (Paper No. 17 of 7/23/2002, page 9) have been fully considered but they are not persuasive. Applicant's arguments that the feature of claim 19 is well known in the art and thus such features are not believe to be necessary to be shown (see Amendment, page 9, element (III), the second full paragraph). The Examiner respectfully disagrees with the applicant's opinions and respectfully invited the applicant to review the Patent rules, in particular, 37 CFR 1.83(a), which states: "The drawing in a...conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box)."

B) Regarding to the objection to the specification as improper incorporation of essential material in the specification by reference to a foreign application/patent, it is noted that in the amendment filed on 7/23/2002, applicant has also provided a copy and an English translation of the reference DE 26 31 551. While the English translation of the foreign reference is considered by the Examiner; however, the submission of the translation of the foreign reference is insufficient to overcome the objection because the essential material in the specification is still referred to a foreign application/patent.

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Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application.

C) Regarding to the rejections of claims under 35 USC 102(b) and 35 USC 103(a), applicant's arguments provided in the amendments (Paper Nos. 17 and 25) have been fully considered but they are not persuasive.

C1) Regard to the rejection of claims 16, 18-20 and 28 under 35 USC 102(b) over the art of Muller et al, applicant has argued that Muller et al do not disclose the feature that a mirror following one of the objectives for reflecting light transmitted through the specimen back into itself exactly. Applicant argued that the system provided by Muller et al comprises an intermediate image plane between lens (16) and reflector (17). The examiner respectfully disagrees with the applicant's opinion for the following reasons.

***Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.*** The optical elements and their arrangement in the device as claimed are clearly disclosed in the microscope provided by Muller et al. In the microscope provided by Muller et al, two objective lens systems disposed on opposite sides of a specimen wherein the two objective systems have the similar optical

characteristics. A mirror (17) is arranged after one of the objective (15) and acts as a phase-conjugating mirror for the purpose of reflecting the light from the specimen passing through the objective (15) back to the specimen. As clearly shown in figure 1, the specimen and the mirror are conjugated to each other so the light from the light source (5) passes through the objective (1) then the specimen will pass through the objective (15) and then reflect from the mirror (17) and return to the specimen exactly. The light path between the objective lens elements (15 and 16) is a collimating/parallel light path so there is not any intermediate image plane as stated by the applicant. A board interpreter for the operation recited in the feature thereof " two objectives...exactly" (claim 16, lines 2-5) is understood as light from the specimen will pass through one objective and then be reflected by the mirror following the objective back to the specimen. The mentioned features do not provide any specific features/limitations for the mirror as well as the structure between the mirror and the objective which is followed by the mirror.

C2) Regard to the rejection of claims 16, 18-20, 26 and 31 under 35 USC 102(b) over the art of Ellis et al, applicant has argued that Ellis et al do not disclose the feature that a mirror following one of the objectives for reflecting light transmitted through the specimen back into itself exactly. Applicant argued that the system provided by Ellis et al comprises an infinity compensating objective lens and cube corner reflectors. The examiner respectfully disagrees with the applicant's opinion for the following reasons.

***Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention***

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***without specifically pointing out how the language of the claims patentably***

***distinguishes them from the references.*** The optical elements and their arrangement in the device as claimed are clearly disclosed in the microscope provided by Ellis et al. In the microscope provided by Ellis et al, two objective lens systems disposed on opposite sides of a specimen wherein the two objective systems have the similar optical characteristics. A reflector (5) is arranged after one of the objective (4) and acts as a phase-conjugating mirror for the purpose of reflecting the light from the specimen passing through the objective (5) back to the specimen. As clearly shown in figure 1, the light passes through the specimen will pass through the objective (4) and then reflect from the mirror (5) and return to the specimen exactly. A board interpreter for the operation recited in the feature thereof " two objectives... exactly" (claim 16, lines 2-5) is understood as light from the specimen will pass through one objective and then be reflected by the mirror following the objective back to the specimen. The mentioned features do not provide any specific features/limitations for the mirror as well as the structure between the mirror and the objective which is followed by the mirror.

C3) Regard to the rejection of claims 16, 18-20, and 23 under 35 USC 102(b) over the art of Yonezawa, applicant has argued that Yonezawa does not disclose the feature that a mirror following one of the objectives for reflecting light transmitted through the specimen back into itself exactly. Applicant argued that the system provided by Yonezawa comprises a quarter-wave plate therefore the light does not reflect back to the specimen exactly. The examiner respectfully disagrees with the applicant's opinion for the following reasons.

***Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.*** The optical elements and their arrangement in the device as claimed are clearly disclosed in the microscope provided by Yonezawa. In the microscope provided by Yonezawa, two objective lens systems disposed on opposite sides of a specimen wherein the two objective systems have the similar optical characteristics. A mirror (11) is arranged after one of the objective (9) and acts as a phase-conjugating mirror for the purpose of reflecting the light from the specimen passing through the objective (9) back to the specimen. While Yonezawa discloses the use of a quarter-wave plate between the objective (9) and the mirror (11); however, the light from the specimen still reflect back to the specimen after reflecting from the mirror and the light still pass the plate both on the As clearly shown in figure 1, the light from the light source (5) passes through the objective (1) then the specimen will pass through the objective (15) and then reflect from the mirror (17) and return to the specimen exactly. The light path between the objective lens elements (15 and 16) is a collimating/parallel light path so there is not any intermediate image plane as stated by the applicant. It is also noted that while the claim uses the term "exactly"; however, the claim fails to provide limitations/specific information for the used term. A board interpreter for the operation recited in the feature thereof " at least one... exactly" (claim 16, lines 4-5) is understood as light from the specimen will pass through one objective and then be reflected by the mirror following the objective back to the specimen. A board interpreter

for the operation recited in the feature thereof "two objectives...exactly" (claim 16, lines 2-5) is understood as light from the specimen will pass through one objective and then be reflected by the mirror following the objective back to the specimen. The mentioned features do not provide any specific features/limitations for the mirror as well as the structure between the mirror and the objective which is followed by the mirror.

18. Regarding to the rejections of claims under 35 USC 103(a), it is noted that since applicant has not provided any particular/specific arguments; therefore, the claims still rejected for the same reasons as set forth in the previous Office action.

### ***Conclusion***

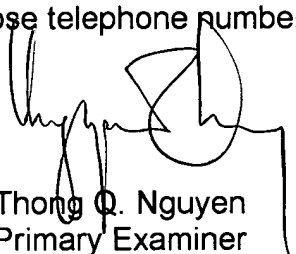
19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is (703) 308-4814. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (703) 305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.



Thong Q. Nguyen  
Primary Examiner  
Art Unit 2872

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